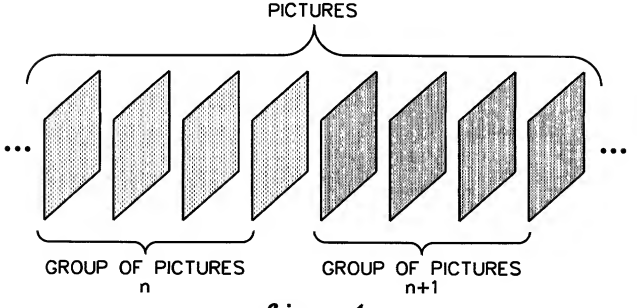

fig. 1
(PRIOR ART)

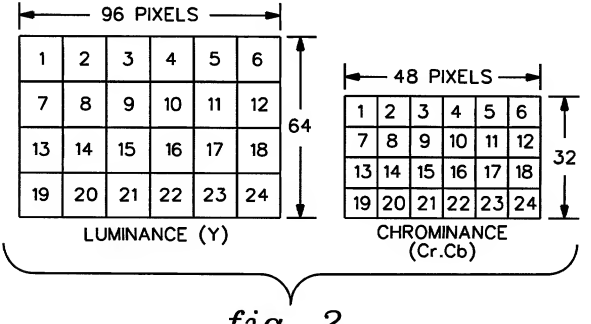

fig. 2
(PRIOR ART)

20010-SEP15001

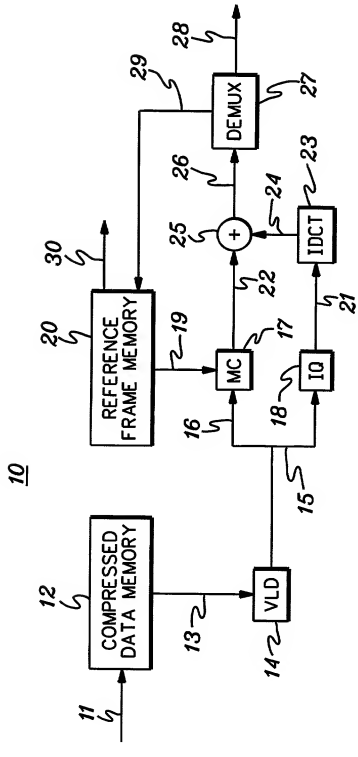

fig. 3

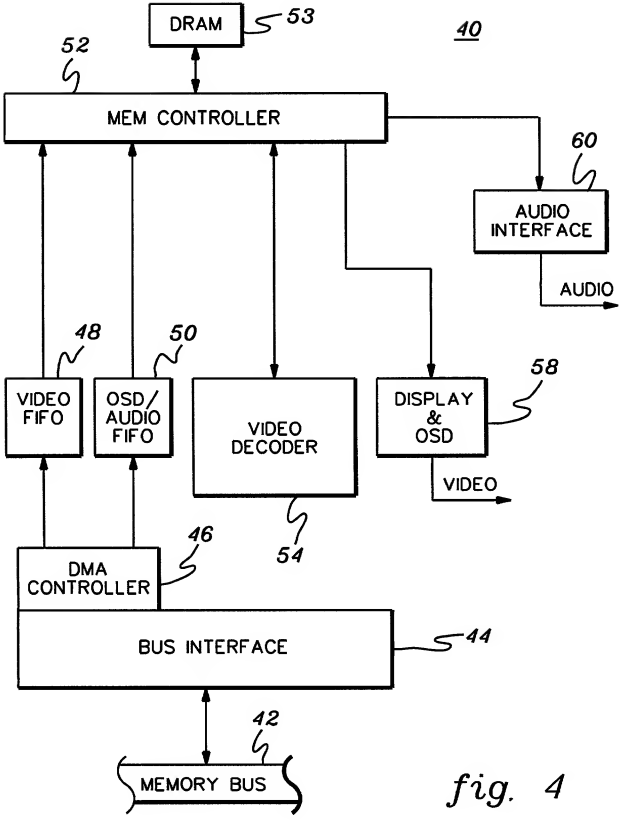
DRAM
53
40
52
MEM CONTROLLER
60
AUDIO INTERFACE
AUDIO
48
50
58
VIDEO FIFO
OSD/ AUDIO FIFO
VIDEO DECODER
DISPLAY & OSD
VIDEO
54
46
DMA CONTROLLER
BUS INTERFACE
44
42
MEMORY BUS

fig. 4

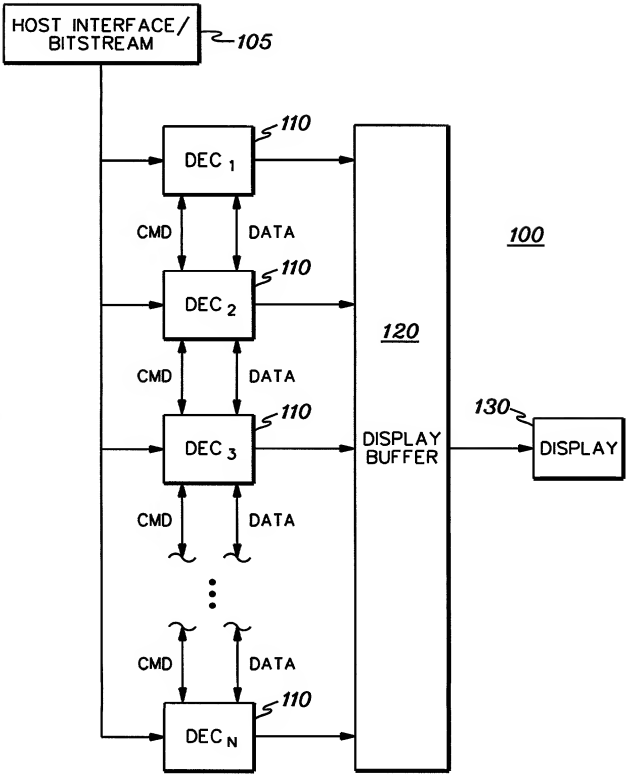
HOST INTERFACE/
BITSTREAM
105
DEC 1
110
CMD
DATA
DEC 2
110
CMD
DATA
DEC 3
110
CMD
DATA
CMD
DATA
DEC N
110
100
120
DISPLAY
BUFFER
130
DISPLAY

fig. 5

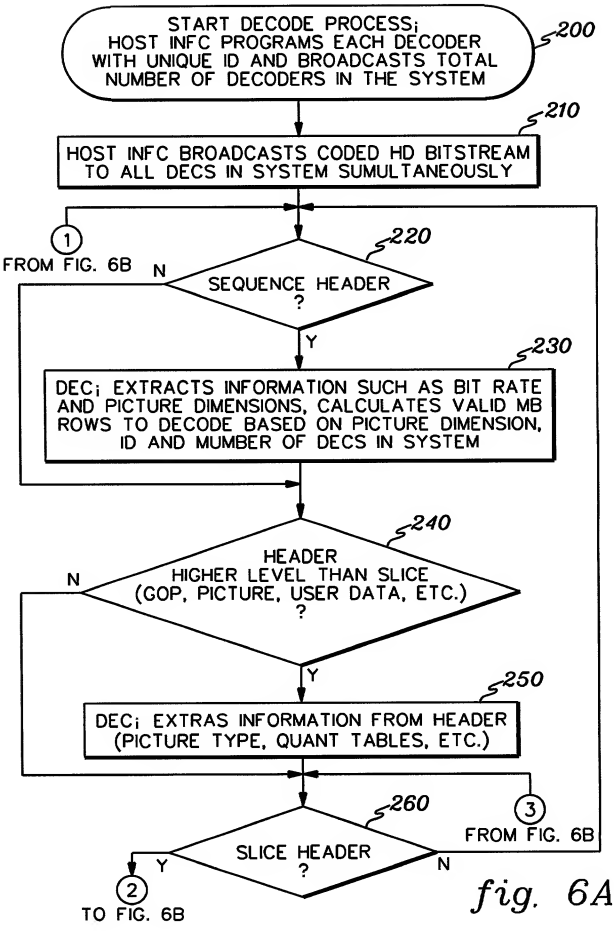

fig. 6A

20011015 SE450 1 US01

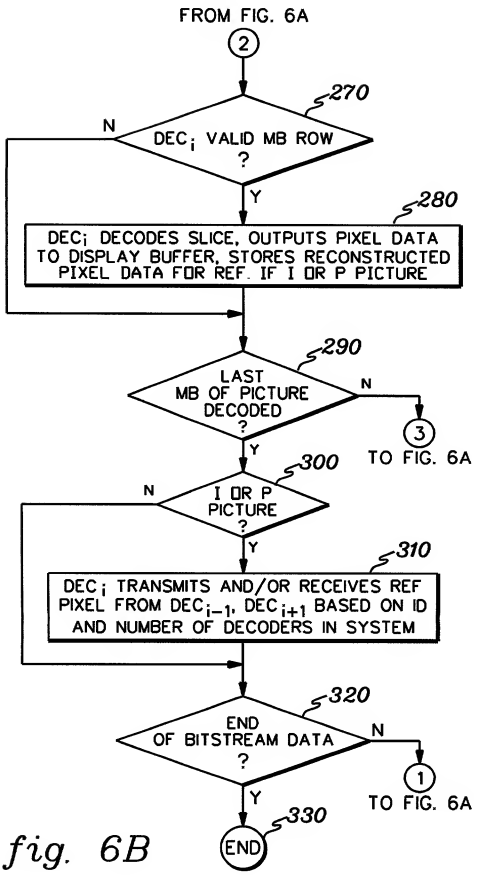
FROM FIG. 6A
2
270
DEC$_i$ VALID MB ROW ?
N
Y
280
DEC$_i$ DECODES SLICE, OUTPUTS PIXEL DATA TO DISPLAY BUFFER, STORES RECONSTRUCTED PIXEL DATA FOR REF. IF I OR P PICTURE
290
LAST MB OF PICTURE DECODED ?
N
3
TO FIG. 6A
Y
300
I OR P PICTURE ?
N
Y
310
DEC$_i$ TRANSMITS AND/OR RECEIVES REF PIXEL FROM DEC$_{i-1}$, DEC$_{i+1}$ BASED ON ID AND NUMBER OF DECODERS IN SYSTEM
320
END OF BITSTREAM DATA ?
N
1
TO FIG. 6A
Y
330
END

fig. 6B

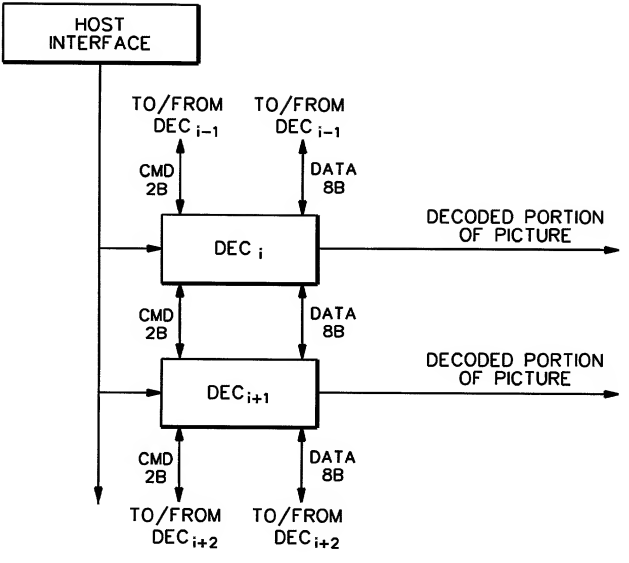
HOST INTERFACE
TO/FROM DEC i-1
TO/FROM DEC i-1
CMD 2B
DATA 8B
DECODED PORTION OF PICTURE
DEC i
CMD 2B
DATA 8B
DECODED PORTION OF PICTURE
DEC i+1
CMD 2B
DATA 8B
TO/FROM DEC i+2
TO/FROM DEC i+2

fig. 7

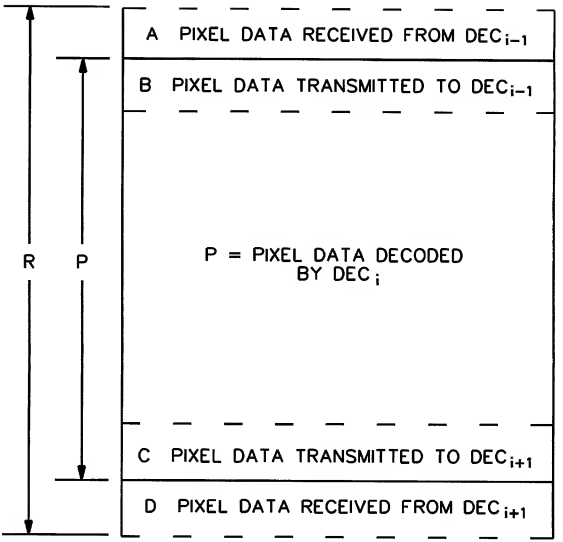
A PIXEL DATA RECEIVED FROM DEC$_{i-1}$
B PIXEL DATA TRANSMITTED TO DEC$_{i-1}$
P = PIXEL DATA DECODED BY DEC$_i$
C PIXEL DATA TRANSMITTED TO DEC$_{i+1}$
D PIXEL DATA RECEIVED FROM DEC$_{i+1}$
R
P
R=TOTAL PIXEL DATA REQUIRED TO DECODE RECONSTRUCTED MACROBLOCKS

fig. 8

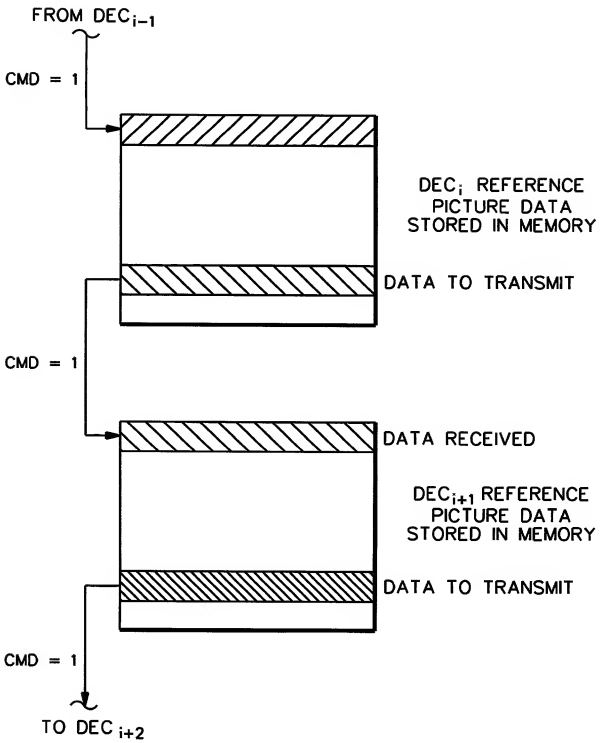
FROM DEC$_{i-1}$
CMD = 1
DEC$_i$ REFERENCE PICTURE DATA STORED IN MEMORY
DATA TO TRANSMIT
CMD = 1
DATA RECEIVED
DEC$_{i+1}$ REFERENCE PICTURE DATA STORED IN MEMORY
DATA TO TRANSMIT
CMD = 1
TO DEC $_{i+2}$

fig. 9A

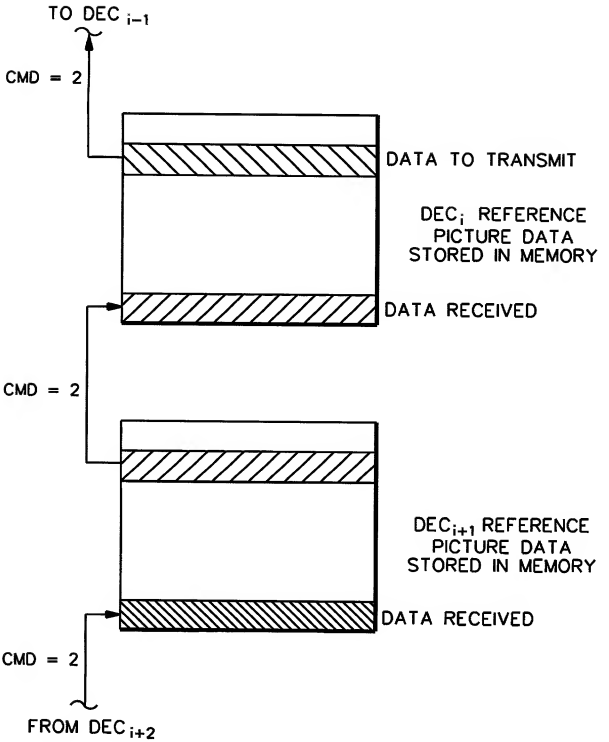
TO DEC i-1
CMD = 2
DATA TO TRANSMIT
DEC$_i$ REFERENCE PICTURE DATA STORED IN MEMORY
DATA RECEIVED
CMD = 2
DEC$_{i+1}$ REFERENCE PICTURE DATA STORED IN MEMORY
DATA RECEIVED
CMD = 2
FROM DEC i+2

fig. 9B